DOCUMENT RESUME

ED 047 912 RE 003 379

AUTHOR Kling, Martin
TITLE Developing a Data Base for Model Building in Reading.
PUB DATE Dec 70
NOTE 22p.; Paper presented at the National Reading Conference, St. Petersburg, Fla., Dec. 3-5, 1970
AVAILABLE FROM Twentieth Yearbook of the National Reading Conference, Inc., 1217 W. Wisconsin Ave., Milwaukee, Wis. 53233. In press

EDRS PRICE EDRS Price MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS Behavioral Science Research, Educational Research, *Language Development, Language Research, Literature Reviews, *Models, Reading, Reading Development, *Reading Processes, Reading Research, *Research and Development Centers, *Theories

ABSTRACT

Designed as a progress report of the literature search portion of the Targeted Research and Development Program in Reading (TRDPR), this paper outlines objectives of the literature search, data base prerequisites for model building, and activities involved in synthesis of efforts. Objectives of the program include identification of literature on the reading process, explanation of how reading and language development processes operate (partial model building), descriptions of models, and development of new hypotheses related to models of reading and language processes. It is suggested (1) that a multidisciplinary team of reading experts, psycholinguists, etc., be named to conduct the review and evaluation with the guidance of an advisory group; (2) that a central processing group coordinate and facilitate their efforts; and (3) that progress of groups be reported at professional meetings. An outline is given of means used to select reviewer-evaluators, advisory panel, and central processing groups. Stages and activities in the literature search from preliminary outline to analysis to presentation of findings are described. Future directions of the TRDPR are outlined and references and tables are included. (MS)

FEB 26 Recd

ED047912

DEVELOPING A DATA BASE FOR MODEL BUILDING IN READING[1,2]

"PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY NATIONAL READING CONFERENCE TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER."

Martin Kling[3]
Rutgers University
New Brunswick, New Jersey 08903

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION
THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

[1]Paper presented at the Symposium, "Modeling Reading, Targeted Research and Development Program in Reading, Right to Read Effort," at the Twentieth Annual Meeting, National Reading Conference, Dec. 3-5, 1970, Sheraton Inn, St. Petersburg, Florida.

[2]Preprint of article in the Twentieth Yearbook of the National Reading Conference. Milwaukee, Wisconsin: The National Reading Conference, 1970, In Press.

[3]The writer invites comments, models and research in Language Development, Learning to Read, and the Reading Process.

RE003 379

DEVELOPING A DATA BASE FOR MODEL BUILDING IN READING[1]

Martin Kling
Rutgers University
New Brunswick,
New Jersey 08903

Literature Search for Model Building

This paper is an overview and progress report of the Targeted Research and Development Program in Reading (TRDPR), Project No. 2: Literature Search, proposed by Kling, Davis and Geyer (6)

[1]Paper presented at the Symposium, "Modeling Reading, Targeted Research and Development Program in Reading, Right to Read Effort," at the Twentieth Annual Meeting, National Reading Conference, Dec. 3-5, 1970, Sheraton Inn, St. Petersburg, Florida.

and funded by the U. S. Office of Education through authorization of the National Center for Educational Research and Development for the period June 30, 1970 - Dec. 31, 1970.[2]

Other reports pertaining to sections of the Literature Search will be presented at this Symposium by Singer (9) on learning to read, Geyer (5) on modeling the reading process, and Athey (1) on language development.

The remainder of the paper will be organized in three main sections: objectives of the Literature Search; prerequisites necessary to develop a data base for model building; and stages and activities in quest for synthesis.

Objectives

The primary objectives of the Literature Search outlined by Kling, Davis and Geyer (6) are:

1. identify and evaluate all significant contributions to the literature in:
   a. language development related to reading;
   b. the reading process;
   c. the development and refinement of skills involved in reading;

[2] Although initially funded for $137,144 for 6 months ending Dec. 31, 1970, continuation funds for $112,390 are being requested for the second 6 months ending June 30, 1971.

2. identify in the literature explanations of how these processes operate and how the behavioral events or operations within them interact with one another (in short, to identify or build models or partial models of these processes);

3. to describe and synthesize models and partial models so as to present as many different logically coherent models in each of these areas (or in any combination of the three) as seem necessary to exhaust the insights and evidence available.

4. describe the hypotheses and associated tests central to developing new research studies needed to refine and extend the models presented, to test the assumptions upon which they were based, and to synthesize with them the unincorporated facts and insights of the fields studied.

Prerequisites for Developing a Data Base

It appeared that in order to carry out the objectives of the Literature Search several prerequisites seemed necessary to mount such a program:[3]

[3]During the weekend of April 10, 1970, Drs. Athey, Geyer, Kling and Singer met at Rutgers to examine the prerequisites and nature of a Literature Search. The heart of the proposal subsequently submitted was based on the seminal thinking of that meeting. A few weeks later Dr. Davis joined the TRDPR proposal writing team of Geyer and Kling. The writer acknowledges with gratitude the support of Dr. Milton Schwebel, Dean, Graduate School of Education, Rutgers University, for providing seed money for the planning sessions and the implementation of the proposal which was submitted to the U. S. Office of Education and subsequently was the basis for the contract for the Literature Search.

1.0 that a team of Reviewer Evaluators who were scholars needed to be forged.

1.1 that this team should come from a variety of disciplines.

1.2 that this team represent various theoretical and research points of view.

1.3 that the members of the team be active researchers in their given disciplines working to bridge the respective discipline with reading.

1.4 that the members of the team demonstrate interest and creative effort in model building.

1.5 that these scholars be involved in ongoing graduate and training programs.

2.0 that an Advisory Panel be part of the TRDPR group and also have compatible characteristics with the Reviewer Evaluators as to 1.1, 1.2, 1.3, 1.4 and 1.5.

3.0 that a Central Processing Group (CPG) be established to coordinate and facilitate the activities of this consortium of scholars. Characteristics of the CPG should reflect some of the following:

3.1 compatibility with the prerequisites in 1.1, 1.2, 1.3, 1.4 and 1.5.

3.2 have available computer capabilities as to programs, programming and hardware.

3.3 that internally, a series of activities be developed to insure interface between Reviewer Evaluators, Advisory Panel members Central Processing Group. Some of these activities include conferences and feedback operations.

4.0 that externally, meaningful reporting to various professional groups be part of the schedule of the contract. Three conferences have already been scheduled. They are the National Reading Conference at St. Petersburg between December 3-5, 1970, the American Educational Research Association meeting in New York between February 4-7, 1971, and the International Reading Association meeting in Atlantic City between April 19-20, 1971, where a two day presession will present the findings of the TRDPR team and the other two projects.

Selection of Reviewer Evaluators

Table 1 presents the areas, domains, names and university affiliations, and academic specializations of the Reviewer Evaluators. Inspection of Table 1 reveals a total of 12 domains in three areas, Language Development, Learning to Read and the Reading Process.

Place Table 1 about here

In the Language Development Area, three domains, language behavior from an applied linguistics point of view, theories of language development and developmental socio-linguistics are covered.

In the Learning to Read Area four domains include orthography, computer simulation models, operant conditioning, and intellectual and non-intellectual factors affecting the learner.

In the Reading Process Area, five domains are considered ranging from sensory processing models, eye-movements and neuropsychological factors, information processing, experimental linguistics and psychometric models.

The Reviewer Evaluators are drawn from 10 major universities with substantive graduate programs associated with the Reviewer Evaluators.

Thus it can be seen that the prerequisites under 1.0 are met.

Selection of Advisory Panel

Table 2 lists the Advisory Panel for the Literature Search by the same three areas as Reviewer Evaluators.

Place Table 2 about here

Inspection of Table 2 indicates that the Advisory Panel clearly interfaces with the domains covered by the Reviewer Evaluators. The nine Advisory Panel members are drawn from an additional four universities and one neurological research laboratory.

Selection of Central Processing Group

Table 3 shows the make-up of the Central Processing

Place Table 3 about here

Group necessary to facilitate the detailed planning of conferences, training procedures, data processing, retrieval functions, and organization necessary to enhance the creative efforts of the Reviewer Evaluators. In addition to feedback within the TRDPR team, provision is also made for liaison between the other two projects of the overall Targeted Research in Reading of the Right to Read Effort. The Convergence Technique is further described by Carrese and Baker (2), Gephart (3), (4), Kling (7) and Penney, Hjelm and Gephart (8).

Six Stages and Activities in Literature Search

Stages I - VI are presented in Figure 1[4] together with the 41 items necessary to implement the Literature Search.

Place Figure 1 about here

Stage I: Preliminaries

Items 1, 2, and 3 have been summarized in Tables 1 and 2, dealing with the Reviewer Evaluators and Advisory Panel members.

[4]The writer gratefully acknowledges the efforts of Dr. John Geyer and Mr. John Nealon, Management Consultant, in developing the PERT logic connected with Figure 1.

Item 4, representing working bibliographies, is a continuous process beginning with the initial stages of the project and continuing until the end of the fiscal year, June 30, 1971. As of November 25, 1970 the Reviewer Evaluators, Advisory Panel and Central Processing Group submitted 8,102 references[5] with the following breakdown:

Learning to Read references	2,145
Reading Process references	4,353
Language Development references	1,604
Total	8,102

Stage II: Conference of TRDPR Team

Item 9 represents an intensive three-day conference with 90% of the TRDPR team attending, which determined procedures and criteria for inclusion of references. From the TRDPR team discussions a Reference Evaluation Form (REF) was developed under the leadership of Dr. Jason Millman, Professor of Educational Research Methodology, Cornell University. Three reference categories were determined to be part of Item 10:

[5]The writer thanks Mrs. Beatrice Mayes, Research Associate, Graduate School of Education, Rutgers University, who supervised a team of six keypunch operators and several graduate students readying the references for a magnetic tape.

1) Model - formulates systematic explanation of phenomena that allows prediction

2) Research - tests hypotheses empirically or logically

3) Non-research - no attempt to test hypotheses empirically or logically

The main purpose of the REF was to assess those references in the working bibliography which warranted further critical review.

Stage III: Analysis of the Literature

In this stage five main tracks flow from the type of reference categorized. One track, research models, is indicated by Item 11 which proceeds to be analyzed in terms of 13, 14, 15, 16, 17, 18, 31, 32, 33 and 34.

The second track, non-research models, begins with Item 12, and proceeds through 13, 14, 15, 16, 17, 18, 31, 32, 33 and 34.

The third track, research studies pertaining to models, begins with 19 and proceeds through 20, 21, 22, and either 23 or 24, and then on to 25, 18, 32, 33 and 34.

The fourth track, non-model research articles, is 26 which proceeds to 20, 21, 22, and either 23 or 24, and then to 25, 18, 31, 32, 33 and 34.

A fifth track, non-model and non-research, begins with 27 and proceeds through 28, 29, 30, 18, 31, 32, 33 and 34.

The heart of these five tracks is developed in the Reference Evaluation Form which is an eight-page form that covers Items 11 through 30. To date, 215 REF's have been received. The assessment of the literature through the use of the REF's is an on-going process and will continue through the end of the project.

Stage IV: Presentation of Reviews of the Literature

This stage of development will consist of a conference among TRDPR members for three days in which critical reviews will be presented as working papers in the form of Psychological Bulletin-type reviews. Immediately following the internal conference, shorter, more formal presentations will be made externally to the American Educational Research Association meeting which will be held in New York. Six symposia now scheduled at AERA are given in Table 4.

Place Table 4 about here

In addition to the internal and external conferences, CPG has computerized Items 35, 37, 38, and 39 with the aid

of a retrieval program called TEXT-PAK[6] initially developed by IBM which was modified for use with the IBM 360/67. CPG is also doing a feasibility study to assess the extent to which Items 11 - 31 can be computerized.

Quest for Synthesis
Stages V and VI

To date, no single individual or group has had as its main thrust the explicit purpose of synthesizing the field of reading in the manner outlined in this paper. The nature of this synthesis is a creative task calling for the detailed planning and utilization of the talent and resources of the individuals and institutions from which this team is drawn. How successful this team will be in carrying out its charge of coming up with a minimum number of models to account for a maximum amount of reading behavior remains to be seen. No claim is made for the finality of the Literature Search reports. The very nature of the scientific endeavor is tentative and open to the continuous scrutiny of the scientific and professional communities.

[6]The writer appreciates the efforts of Mrs. Leny Struminger, Programming Analyst, Graduate School of Library Service, Rutgers University, for implementing the TEXT-PAK system for use in this project.

References

1. Athey, Irene J. "Theories of Language Development Underlying Reading," Twentieth Yearbook of the National Reading Conference. Milwaukee, Wisconsin: The National Reading Conference, 1970, In Press.

2. Carrese, Louis M. and Carl G. Baker. "The Convergence Technique: A Method for the Planning and Programming of Research Efforts," Management Science, 13: B-420-438, April, 1967.

3. Gephart, William J. Application of the Convergence Technique to Basic Studies of the Reading Process, Final Report, Project No. 8-0737, Grant No. OEC-0-8-080737-4335, U. S. Department of Health, Education, and Welfare, Office of Education, National Center for Educational Research and Development, 1970, 239 pp.

4. Gephart, William J. "The Targeted Research and Development in Reading: A Report on the Application of the Convergence Technique," Reading Research Quarterly, Vol. V, No. 4, Summer, 1970, 505-523.

5. Geyer, John J. "Modeling Reading Processes," Twentieth Yearbook of the National Reading Conference. Milwaukee, Wisconsin: The National Reading Conference, 1970, In Press.

6. Kling, Martin, Frederick B. Davis and John J. Geyer. Targeted Research and Development Program in Reading (TRDPR), Project No. 2: Literature Search, Proposal for Research and/or Related Activities Submitted to the U. S. Commissioner of Education for Support Through Authorization of the National Center for Educational Research and Development, submitted May 11, 1970, 42 pp.

7. Kling, Martin. "Right to Read Effort: Phase I, 1970-1971," The Reading Instruction Journal, Vol. 14, No. 2, January, 1971.

8. Penney, Monte, Howard F. Hjelm, and William J. Gephart. "The Targeted Research and Development Program in Reading," American Educational Research Journal, Vol. VII, No. 3, May, 1970, 425-448.

9. Singer, Harry. "Theories of Reading for Learning to Read in the Primary Grades," Twentieth Yearbook of the National Reading Conference. Milwaukee, Wisconsin: The National Reading Conference, 1970, In Press.

TABLE 1

REVIEWER-EVALUATORS FOR LITERATURE SEARCH
IN TARGETED RESEARCH AND DEVELOPMENT PROGRAM IN READING

Area	Domain	Name & Univ.	Academic Specialization
Language Development	Theory of Language Development	Irene Athey University of Rochester	Early Childhood, Reading
Language Development	Language Behavior	Ronald Wardhaugh University of Michigan	Applied Linguistics, Reading
Language Development	Developmental Sociolinguistics	Doris Entwisle Johns Hopkins University	Sociology
Learning to Read	Writing Systems	William Gillooly Rutgers University	Verbal Learning
Learning to Read	Cognitive, Affective	Joanna Williams University of Pennsylvania	Learning, Psychological Bases of Reading
Learning to Read	Operant Models	Richard Bloom State University of New York, Stony Brook	Operant Learning, Mathemagenic Aspects of Learning
Learning to Read	Computer Simulation Models	Duncan Hansen Florida State University	Programmed Learning
Reading Process	Psycholinguistics, Information Processing	Wendell Weaver University of Georgia	Psychology of Reading
Reading Process	Sensory Processing	H. Richard Schiffman Rutgers University	Psychology of Perception

TABLE 1 (Continued)

REVIEWER-EVALUATORS FOR LITERATURE SEARCH
IN TARGETED RESEARCH AND DEVELOPMENT PROGRAM IN READING

Area	Domain	Name & Univ.	Academic Specialization
Reading Process	Psychometric Models	Frederick Davis University of Pennsylvania	Psychology of Reading, Psychometrics
Reading Process	Eye Movements, Neuropsychology	Norman and Jane Mackworth Stanford University	Psychology of Perception
Reading Process	Experimental Linguistics	Stanley Wanat Cornell University	Linguistics

TABLE 2

ADVISORS FOR LITERATURE SEARCH IN
TARGETED RESEARCH AND DEVELOPMENT PROGRAM IN READING

Area	Domain	Name & Univ.	Academic Specialization
Language Development	Linguistics	Richard Hodges University of Chicago	Applied Linguistics
Language Development	Psycholinguistics	Robert Ruddell University of California, Berkeley	Language Arts
Language Development	Cognitive Development	David Elkind University of Rochester	Developmental Psychology
Learning to Read	Verbal Learning	James Deese Johns Hopkins University	Learning, Psycholinguistics
Learning to Read	School Learning	Harry Singer University of California, Riverside	Psychology of Reading
Reading Process	Neurophysiology-Biophysics	Robert Efron V. A. Hospital, Martinez, California	Neurology
Reading Process	Information Processing	Paul Kolers University of Toronto	Human Factors
Reading Process	Psychology of Reading	Albert Kingston University of Georgia	Educational Psychology
Reading Process	Brain Mechanisms	Karl Pribram Stanford University	Neuropsychology, Neurophysiology

TABLE 3

CENTRAL PROCESSING GROUP FOR LITERATURE SEARCH
IN TARGETED RESEARCH AND DEVELOPMENT PROGRAM IN READING

Project Responsibility	Name	Academic Specialization
Principal Investigator	Martin Kling	Reading Theory, Psychology of School Subjects
Director	Frederick Davis	Psychology of Reading, Psychometrics
Associate Director	John Geyer	Reading Models, Sensory Processing
Project 1 Liaison Development of Specifications for Criteria of Measurement of Adult Functional Reading	Frederick Davis	-----
Project 3 Liaison Literature Search for Instructional Practices and Outcomes	James Kimple	Educational Administration Superintendent of Schools South Brunswick Township
Reading Processes: Area Coordinator	John Geyer	-----
Learning to Read: Area Coordinator	Joanna Williams	Learning, Child Development, Reading
Language Development: Area Coordinator	Irene Athey	Early Childhood, Reading

TABLE 4

SIX SYMPOSIA OF TRDPR TEAM TO BE PRESENTED
AT AMERICAN EDUCATIONAL RESEARCH ASSOCIATION MEETING (FEB. 4-7, 1971)

Symposium	Organizer, Chairman, Discussants	Papers	Participants
I. Language Models and Reading	Organizer: Irene J. Athey, University of Rochester Chairman: Walter Petty, University of New York Buffalo Discussants: Robert B. Ruddell, University of California, Berkeley; Richard Hodges, University of Chicago	Developmental Models of Language and Their Application Linguistic Models of Children's Language Development in Relation to Reading	Irene Athey, University of Rochester Ronald Wardhaugh, University of Michigan
II. Attentional Processes in Reading	Organizer: Stanley F. Wanat, Cornell University Chairman: Richard C. Atkinson, Stanford University Discussants: Robert Efron, V. A. Hospital, Martinez, California; John Geyer, Educational Records Bureau; Paul A. Kolers, University of Toronto	Brain Function in the Production of Signs and Symbols What Eye-Cameras Can Do in the Study of Reading Linguistic Structure and Visual Attention in Reading	Karl Pribram, Stanford University Norman H. Mackworth, Stanford University Stanley F. Wanat, Cornell University

TABLE 4 (Continued)

SIX SYMPOSIA OF TRDPR TEAM TO BE PRESENTED
AT AMERICAN EDUCATIONAL RESEARCH ASSOCIATION MEETING (FEB. 4-7, 1971)

Symposium	Organizer, Chairman, Discussants	Papers	Participants
III. Targeted Research and Development Program in Reading: Phase I-Right to Read Effort, USOE National Center for Educational Research and Development	Organizer: Martin Kling Rutgers University Chairman: Ralph Staiger International Reading Association Discussants: Thomas F. Donlon, Educational Testing Service Frederick B. Davis, University of Pennsylvania Monte Penney, U. S. Office of Education	Search for Criteria Quest for Synthesis State of the Art	Donald S. Trismen Educational Testing Service Martin Kling Rutgers University Reginald A. Corder Educational Testing Service
IV. Toward the Development of a Model of the Acquisition of Reading Skills	Organizer: Joanna P. Williams University of Pennsylvania Chairman: John B. Carroll Educational Testing Service Discussants: Harry Singer, University of California, Riverside Kenneth Goodman, Wayne State University	Learning to Read from an Operant Learning Perspective Influence of Writing System Characteristics on Learning to Read Cognitive and Affective Aspects of Learning to Read	Richard D. Bloom State University of New York, Stony Brook William B. Gillooly Rutgers University Joanna P. Williams University of Pennsylvania

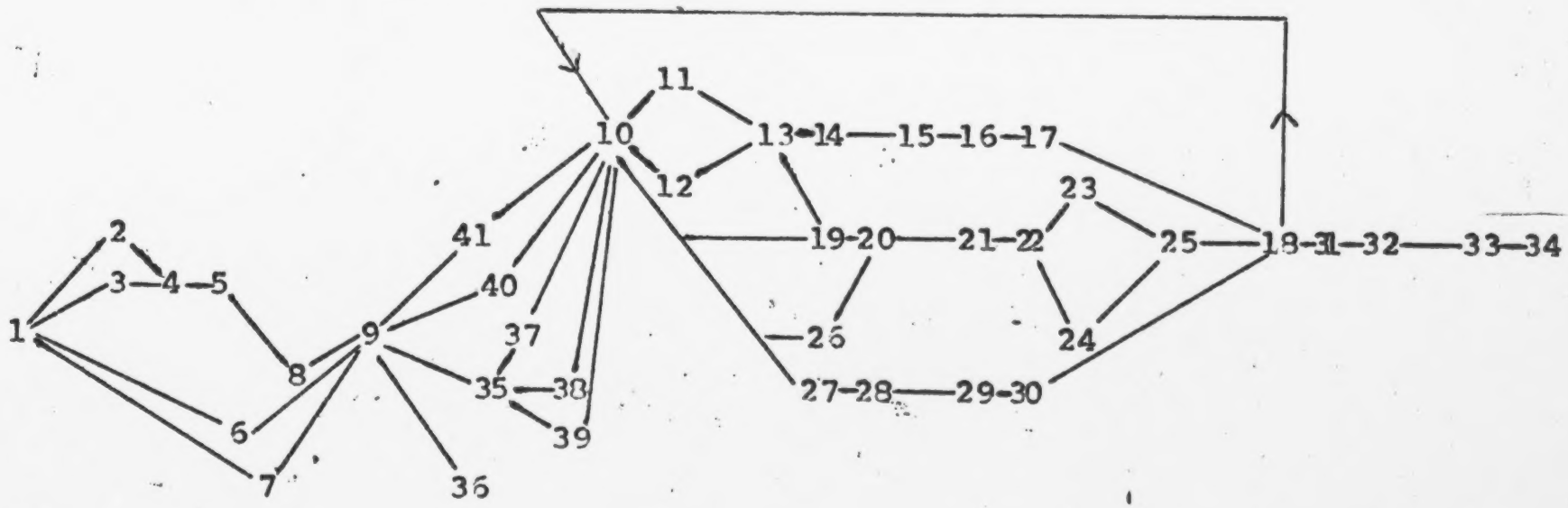
TABLE 4 (Continued)

SIX SYMPOSIA OF TRDPR TEAM TO BE PRESENTED
AT AMERICAN EDUCATIONAL RESEARCH ASSOCIATION MEETING (FEB. 4-7, 1971)

Symposium	Organizer, Chairman, Discussants	Papers	Participants
V. Developing an Informational-Flow Theory of Learning to Read and the Reading Process	Organizers: Albert J. Kingston, Wendell W. Weaver, University of Georgia Chairman: James A. Wash, West Georgia College Discussants: Richard J. Reynolds, State University of New York, Binghamton; Earl F. Rankin, University of Kentucky	Rationale for an Information-Flow Theory of the Reading Process	Albert J. Kingston, University of Georgia
		The Campbell-Fiske Procedure as a Psychological Test of Construct Reality	Fred W. Ohnmacht, State University of New York, Albany
		The Problem of Measuring Instruments in Studying Covert Behaviors	Jaap Tuinman, University of Indiana
		Assessment of Oral-Written Language Behaviors with the Campbell-Fiske Procedure	Wendell W. Weaver, University of Georgia
VI. Special Interest Group: Targeted R & D in Reading and its Implications for Basic Research	Chairman: Ernst Rothkopf, Bell Telephone Laboratory	Planning for Targeted R & D in Reading	Monte Penney, National Center for Educational Research and Development USOE
		Collecting a Data Base for a Reading Technology	Edmund B. Coleman, University of Texas El Paso
		An Invisible College for Basic Research in Reading	Martin Kling, Rutgers University

FIGURE 1

TARGETED RESEARCH AND DEVELOPMENT PROGRAM IN READING
LITERATURE SEARCH
OEC-0-70-4790(508)



Jul. Aug. Sept. Feb.

STAGE I (6/30-8/27/70) STAGE II (8/28-8/30/70) STAGE III (9/1/70-1/31/71) STAGE IV (2/1-2/7/71)

STAGE I: Preliminaries (June 30-Aug. 27)

1. Start
2. Select Reviewer Evaluators
3. Select Advisory Panel
4. Working bibliographies submitted by each R.E. & A.P. for his area and domain
5. Synthesis and distribution of bibliographies
6. Organization and training of CPG
7. Conference preparation
8. Develop coding and operational procedures

STAGE II: Conference of TRDPR Team (Aug. 28-30)

9. Conference at Rutgers

STAGE III: Analysis of the Literature (Sept. 1-Jan. 31)

10. Items in listed sources selected on priority basis
11. Articles presenting research models
12. Articles presenting non-research models
13. Review of cataloged models
14. Description of the model (abstract of article)
15. List critical assumptions
16. Catagorize model
17. List constituent elements
18. Submit to CPG all data cataloged (coded, stored in master bibli.)
19. Research studies pertaining to models
20. Abstract studies
21. List assumptions
22. Profile, (review methodology)
23. List author's weak conclusions
24. List author's strong conclusions
25. List R.E.'s conclusions
26. Non-model research articles
27. Non-model, non-research articles
28. Abstract studies
29. List assumptions
30. List untested hypothesis
31. Compiled, coded, print-out of submitted articles returned to R.E.'s
32. R.E.'s submit critical review of models in their areas and domains

STAGE IV: Presentation of Reviews of Literature (Feb. 1-7)

33. Semi-annual progress report and conference (Feb. 1-3)
34. AERA Conference (Feb. 4-7), NYC
35. CPG eliminates redundancy and errors in master bibliography
36. CPG performs detail planning of synthesis phase
37. CPG submits list of overlaps to R.E.'s in area and domain
38. CPG submits general index to R.E.'s in each of three areas
39. CPG submits author index to R.E.'s in each of three areas
40. CPG submits periodic dissemination of coded sound conclusions to all R.E.'s
41. CPG processes R.E. queries

STAGE V: Synthesis of Literature (Feb. 7-May 15, 1971)

PRE-SESSION: International Reading Associatic (April 19-20, 1971 Atlantic City, N.J

STAGE VI: Synthesis and Final Report (May 15, 1971-June 30, 1971)